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PUBLIC HEALTH ADVISORY

TO: New Hampshire Long-term Care Facility Administrators, Medical Directors and Infection Control Practitioners

FROM: Jesse Greenblatt, MD, MPH, State Epidemiologist

DATE: December 8, 2003

SUBJECT: Recommendations for the Prevention and Control of Influenza Outbreaks in Long-term Care Facilities

Epidemics of influenza occur every winter and cause an average of approximately 36,000 deaths annually in the United States. Rates of serious illness and death from influenza are highest among persons aged ≥65 years and persons of any age who have medical conditions that place them at high risk for complications from influenza. Older adults make up 90% of deaths from pneumonia and influenza during influenza season each year.

The Centers for Disease Control and Prevention (CDC) announced that early evidence suggests that the 2003-04 flu season could be more severe than the past three years. This underscores the need for timely immunization of persons at high risk of serious complications of influenza, and for their caregivers, especially healthcare workers. Additionally, CDC is alerting state health agencies that flu vaccine supply could be low for the rest of the season.

The prevention and control of influenza outbreaks pose an important challenge faced by all long-term care facilities. This advisory gives background information on influenza in the elderly and practical recommendations for the prevention and control of influenza outbreaks in nursing homes or other chronic care facilities.

Vaccination

Influenza vaccine is the primary method for preventing influenza and its more severe complications. Influenza vaccine contains three virus strains, usually two type A and one type B, representing the influenza viruses likely to circulate in the United States in the upcoming winter. Elderly persons and persons with certain chronic diseases may develop lower post-vaccination antibody titers than healthy young adults and thus can remain susceptible to influenza-related upper respiratory tract infection. However, among such persons the vaccine can still be effective in preventing secondary complications and reducing the risk for hospitalization and death. In an elderly, institutionalized population, even though the vaccine may only be 30-40% effective in preventing influenza illness, the vaccine is up to 50%-60% effective in preventing hospitalization or pneumonia and 80% effective in preventing death in this population.

Practical Vaccination Tips

- Vaccinate all nursing home residents each year against influenza unless a resident has an individual contraindication.
- Use organized, facility-wide vaccination campaigns each fall to vaccinate nursing home residents. All residents should be vaccinated at one time, immediately before the influenza season. Pre-approved physician orders can facilitate this process.
- For organized vaccination campaigns, the best time to vaccinate is usually from October through mid-November, because influenza activity in the United States usually peaks between late December and early March. Avoid giving vaccine earlier than October in facilities such as nursing homes, because antibody levels in the elderly can begin to decline within a few months of vaccination.
- Pay special attention to the influenza vaccination status of new residents admitted to a nursing home or chronic care facility after the institution's annual fall vaccination campaign. New residents admitted during the winter months that are unvaccinated or have unknown vaccination status should be vaccinated at the time of admission.
- Encourage the vaccination of all employees, especially those who enter resident areas for any reason even if they do not perform direct resident care. Staff vaccination is critical to protecting nursing-home residents against influenza. Using incentives may help improve employee vaccination levels. For example, employees who get vaccinated could be given a small monetary reward, be credited with compensatory leave, or be entered into a raffle to win prizes.
- Document vaccinations of all residents and staff members to identify susceptible individuals. Make sure to add newly admitted residents to this list as the winter months progress.
- Educate staff that even if influenza does occur among vaccinated residents, the vaccine still helps protect these residents from the more serious complications of influenza, such as pneumonia, hospitalization and death.
- Pay close attention to proper temperature during storage and administration of the vaccine. Generally, influenza vaccine should be kept at 36-46 ° F, but check the package insert to be sure. Freezing destroys the vaccine's potency, so be sure not to let the vaccine freeze.

Antiviral Medication

Prophylaxis with antiviral drugs is not a substitute for vaccination. However, even under the best circumstances, institutional outbreaks of influenza may still occur because of the vaccine's variable efficacy in the elderly and because visitors or staff may unknowingly introduce influenza into a facility. Antiviral drugs can be a very effective additional protection for residents during an outbreak in a facility.

Four licensed antiviral drugs for influenza are available in the U.S.: amantadine (Symmetrel®), rimantadine (Flumadine®), zanamivir (Relenza®), and oseltamivir (Tamiflu®). The four drugs differ in their pharmacokinetics, side effects, routes of administration, approved age groups, dosages and costs.

Amantadine and rimantadine are related antivirals and are licensed for treatment of influenza A viruses but not influenza B viruses. Our experience suggests that central nervous system (CNS) side effects can be a big concern for administration of amantadine in elderly long-term care residents. Rimantadine is associated with fewer central nervous system (CNS) side effects than amantadine. In addition to rimantadine's lower risk of adverse reactions, other advantages include rimantadine's easier dosage adjustment in patients with renal impairment and less risk of drug-drug interactions.

Two newer agents, zanamivir and oseltamivir are chemically related antiviral drugs known as neuraminidase inhibitors, and are approved for treatment of uncomplicated influenza A and B within two

days of symptom onset. Oseltamivir is also approved for prophylaxis. These drugs cause fewer side effects than amantadine and rimantadine and do not appear to adversely affect the CNS.

The majority of published reports concerning the use of these antivirals are based on studies of influenza A outbreaks among nursing home populations where amantadine or rimantadine were used. Less information is available regarding the use of zanamivir or oseltamivir in influenza A or B outbreaks.

Practical Influenza Prophylaxis Tips

- Be on the lookout for an influenza outbreak. Among staff and residents and start chemoprophylaxis as soon as an outbreak is suspected or confirmed. Uncomplicated influenza is characterized by the abrupt onset of constitutional and respiratory signs and symptoms (e.g., fever, myalgia, headache, severe malaise, nonproductive cough, sore throat, and rhinitis). Additional daily monitoring of resident temperatures, symptoms or even wing census figures can give a determination of an increase in cases.
- Obtain pre-approved orders from the resident's health care provider or the facility medical director to avoid delay in starting facility-wide chemoprophylaxis during an outbreak. If this is not possible, have pre-determined plans in place to obtain orders for antiviral medications on short notice.
- Administer chemoprophylaxis to all residents whether or not they have been vaccinated. Antiviral treatment can shorten the duration of illness if it is begun within 48 hours of illness onset.
- Determine the dosage of antiviral treatment or prophylaxis individually for each resident. Consult the drug package insert for further information. Be on the lookout for side effects in residents.
- When an institutional outbreak of influenza occurs, offer chemoprophylaxis to unvaccinated staff, especially those who provide direct care to residents. If the outbreak is caused by a variant strain of influenza A not well matched by the year's vaccine, consider chemoprophylaxis for all employees regardless of their vaccination status.

Other Recommendations for Controlling Influenza Outbreaks in Nursing Homes

<u>Laboratory confirmation for suspect cases:</u>

Since the appropriate treatment of patients with viral respiratory illness depends on accurate and prompt diagnosis, confirm the diagnosis of influenza with laboratory testing in suspect cases. Rapid diagnostic laboratory tests are available, and can provide results in as little as 30 minutes. However, some rapid assays detect only influenza A and do not detect influenza B. In addition, because of problems with false-negative results, a negative rapid assay for influenza should always be sent for influenza culture.

If your long-term care facility is trying to determine whether an outbreak is occurring, the use of viral culture remains critical. The NH Department of Health and Human Services can provide specimen kits for influenza culture so that nasopharyngeal swab specimens can be done promptly at a facility, sent to the PHL, and culture results obtained as quickly as possible. Please call the NH DHHS at 603-271-4496 or 1-800-852-3345, ext. 4496 to arrange.

Facility-wide recommendations during an outbreak of influenza:

Promote strict hand washing for all facility residents and staff with soap and hot water or alcohol-based hand gel. The ICP should review proper hand washing technique with the facility staff.

Display DHHS hand washing posters. This poster can be downloaded from the Department's website at http://www.dhhs.state.nh.us/DHHS/BCDCS/LIBRARY/Fact+Sheet/default.htm .

Maximize facility ventilation by opening windows as appropriate.

Consider temporarily suspending all communal activities if an outbreak is developing or present. This includes dining room use by any affected residents and staff, parties, entertainers, and any visitors traveling between resident rooms (i.e., pet therapy visitors).

If an outbreak occurs, restrict new admissions to affected units. If transmission to other units/floors/wings occurs, DHHS should have been notified and we can help you to determine whether all admissions to the facility should be restricted.

Restrict staff that have been working in outbreak-affected units from "floating" to other units.

Restrict well staff and residents from visiting or walking through the affected unit/floor/wing.

Provide for sanitary disposal of oral and nasal secretions.

Consider screening visitors during influenza season and asking visitors with respiratory illness symptoms to delay their visit until their illness is resolved

Encourage family members of residents to consider getting vaccinated if they visit the nursing home regularly.

Staff-specific recommendations

Staff caring for ill residents should follow contact and airborne precautions, using surgical masks, gowns, and gloves.

Ill staff should report their symptoms to the ICP.

Ill staff should be encouraged to take time off and should remain home until at least 48 hours after symptoms resolve.

Give specific attention to "rotating/float" staff (nursing, housekeeping, food service, etc) that work in more than one institution on a routine basis. Consider restricting the float schedule from an institution with an active outbreak. Facility administration should be aware of "rotating" staff and coordination may be required from temporary medical employment agencies.

Health care provider approval to return to work should be considered as needed.

Because influenza outbreaks often cause administrative challenges due to staff illness and absenteeism, it can be useful to make plans ahead of time for how to deal with staffing shortages.

Resident-specific recommendations

Restrict ill residents from using the dining room or common areas. Meals should be delivered to individual rooms.

Encourage residents and staff to cover their mouths while coughing.

Follow directions for sanitary disposal of oral/nasal secretions.

Restrict visitors to ill residents. This recommendation may need to be reviewed on a case-by-case basis based on the visitor's vaccination status and whether they have any symptoms of influenza.

The NH Bureau of Communicable Disease Control staff is always available for consultation and assistance in controlling influenza outbreaks. Please always report any increase in cases of respiratory or influenza-like illness; our staff will help you to develop tailored control measures for your facility. During regular business hours, they can be reached at 603-271-4496 or 800-852-3345, ext. 4496. After hours or on weekends, please call the state switchboard at 603-271-5300 or 800-852-3345, ext. 5300 and request the Public Health Nurse on call.

References:

Centers for Disease Control and Prevention. Prevention and control of influenza: recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 1999 Apr 30;48(RR-4): 1-28

Pickering L., (ed) *2003 Red Book: Report of the Committee on Infectious Diseases*. 26th ed., Elk Grove Village, IL: American Academy of Pediatrics.